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TITLE: Oxidation dyeing composition for keratin fibres and dyeing method using said composition

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CLAIMS:

What is claimed is:

1. A ready-to-use composition for the oxidation dyeing of keratin fibers comprising:

at least one solvent chosen from water and organic solvents,

at least one oxidation base,

at least one first coupler chosen from the meta-phenylenediamines of formula (I) below, and acid-addition salts thereof: ##STR10##

in which:

R.sub.1 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals and C.sub.2 -C.sub.4 polyhydroxyalkyl radicals;

R.sub.2 and R.sub.3, which may be identical or different, are chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals and C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals;

R.sub.4 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkoxy radicals, C.sub.1 -C.sub.4 aminoalkoxy radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals, C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals and 2,4-diaminophenoxyalkoxy radicals; and

wherein at least one of said radicals R.sub.1 to R.sub.4 is a radical other than a hydrogen atom,

at least one second coupler chosen from meta-aminophenols, meta-diphenols and acid-addition salts thereof,

at least one enzyme chosen from 2-electron oxidoreductases,

at least one donor for said enzyme; and

wherein said composition does not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

2. The composition according to claim 1, wherein said keratin fibers are human keratin fibers.

3. The composition according to claim 2, wherein said human keratin fibers are human hair.

4. The composition according to claim 1, wherein said at least one first coupler is chosen from 3,5-diamino-1-ethyl-2-methoxybenzene, 3,5-diamino-2-methoxy-1-methylbenzene, 2,4-diamino-1-ethoxybenzene, 1,3-bis(2,4-diaminophenoxy)propane, bis(2,4-diaminophenoxy)methane, 1-(.beta.-aminoethyloxy)-2,4-diaminobenzene, 2-amino-1-(.beta.-hydroxyethyloxy)-4-methylaminobenzene, 2,4-diamino-1-ethoxy-5-methylbenzene, 2,4-diamino-5-(.beta.-hydroxyethyloxy)-1-methylbenzene, 2,4-diamino-1-(.beta.,.gamma.-dihydroxypropyloxy)benzene, 2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene and 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof.

5. The composition according to claim 1, wherein said at least one first coupler is present in an amount ranging from 0.0001 to 5% by weight relative to the total weight of the composition.

6. The composition according to claim 5, wherein said at least one first coupler is present in an amount ranging from 0.005 to 3% by weight relative to the total weight of the composition.

7. The composition according to claim 1, wherein said at least one enzyme is chosen from pyranose oxidases, glucose oxidases, glycerol oxidases, lactate oxidases, pyruvate oxidases and uricases.

8. The composition according to claim 1, wherein said at least one enzyme is chosen from uricases of animal, microbiological and biotechnological origin.

9. The composition according to claim 1, wherein said at least one enzyme is present in an amount ranging from 0.01 to 20% by weight relative to the total weight of said composition.

10. The composition according to claim 9, wherein said at least one enzyme is present in an amount ranging from 0.1 to 5% by weight relative to the total weight of said composition.

11. The composition according to claim 1, wherein said at least one donor for said enzyme is chosen from D-glucose, L-sorbose, D-xylose, glycerol, dihydroxyacetone, lactic acid and salts thereof; pyruvic acid and salts thereof; and uric acid and salts thereof.

12. The composition according to claim 11, wherein said at least one donor for said enzyme is chosen from uric acid and its salts.

13. The composition according to claim 1, wherein said at least one donor for said enzyme is present in an amount ranging from 0.01 to 20% by weight relative to the total weight of said composition.

14. The composition according to claim 13, wherein said at least one donor for said enzyme is present in an amount ranging from 0.1 to 5% by weight relative to the total weight of said composition.

15. The composition according to claim 1, wherein said at least one oxidation base is chosen from para-phenylenediamines, double bases, para-aminophenols, ortho-aminophenols, heterocyclic bases and acid-addition salts thereof.

16. The composition according to claim 15, wherein said para-phenylenediamines are chosen from para-phenylenediamines of formula (II) below, and acid-addition salts thereof: ##STR11##

in which:

R.sub.5 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, C.sub.2 -C.sub.4 polyhydroxyalkyl radicals, (C.sub.1 -C.sub.4)alkoxy(C.sub.1 -C.sub.4)alkyl radicals, C.sub.1 -C.sub.4 alkyl radicals substituted with a nitrogenous group, a phenyl radical and a 4'-aminophenyl radical;

R.sub.6 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, C.sub.2 -C.sub.4 polyhydroxyalkyl radicals, (C.sub.1 -C.sub.4)alkoxy(C.sub.1 -C.sub.4)alkyl radicals and C.sub.1 -C.sub.4 alkyl radicals substituted with a nitrogenous group;

R.sub.7 is chosen from a hydrogen atom, halogen atoms, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, C.sub.1 -C.sub.4 hydroxyalkoxy radicals, acetylamino(C.sub.1 -C.sub.4)alkoxy radicals, C.sub.1 -C.sub.4 mesylaminoalkoxy radicals and carbamoylamino(C.sub.1 -C.sub.4)alkoxy radicals, and

R.sub.8 is chosen from a hydrogen, halogen atoms and C.sub.1 -C.sub.4 alkyl radicals.

17. The composition of claim 16, wherein said halogen atoms are chosen from chlorine, bromine, iodine and fluorine atoms.

18. The composition according to claim 16, wherein said para-phenylenediamines of formula (II) are chosen from para-phenylenediamine, para-toluylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N-dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3-methylaniline, N,N-bis(.beta.-hydroxyethyl)-para-phenylenediamine, 4-amino-N,N-bis(.beta.-hydroxyethyl)-2-methylaniline, 4-amino-2-chloro-N,N-bis(.beta.-hydroxyethyl)aniline, 2-.beta.-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-para-phenylenediamine, N-(.beta.-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-para-phenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N,N-(ethyl-.beta.-hydroxyethyl)-para-phenylenediamine, N-(.beta.,.gamma.-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-.beta.-hydroxyethyloxy-para-phenylenediamine, 2-.beta.-acetylaminoethyloxy-para-phenylenediamine, N-(.beta.-methoxyethyl)-para-phenylenediamine, and acid-addition salts thereof.

19. The composition according to claim 15, wherein said double bases are chosen from double bases of formula (III) below, and acid-addition salts thereof: ##STR12##

in which:

Z.sub.1 and Z.sub.2, which may be identical or different, are chosen from a hydroxyl radical, an --NH.sub.2 radical optionally substituted with C.sub.1 -C.sub.4 alkyl radicals or with a linker arm Y;

the linker arm Y is chosen from linear and branched alkylene chains containing from 1 to 14 carbon atoms, which may be interrupted by or terminated with at least one entity chosen from nitrogenous groups and hetero atoms, and optionally

having at least one substituent chosen from hydroxyl and C.sub.1 -C.sub.6 alkoxy radicals;

R.sub.9 and R.sub.10, which may be identical or different, are chosen from a hydrogen atom, halogen atoms, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, C.sub.2 -C.sub.4 polyhydroxyalkyl radicals, C.sub.1 -C.sub.4 aminoalkyl radicals and a linker arm Y;

R.sub.11, R.sub.12, R.sub.13, R.sub.14, R.sub.15 and R.sub.16, which may be identical or different, are chosen from a hydrogen atom, a linker arm Y and C.sub.1 -C.sub.4 alkyl radicals; and wherein said compounds of formula (III) and salts thereof contain only one linker arm Y per molecule.

20. The composition according to claim 19, wherein said hetero atoms are chosen from oxygen, sulphur and nitrogen atoms.

21. The composition according to claim 19, wherein said double bases of formula (III) are chosen from
N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol ,
N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine,
N,N'-bis(4-aminophenyl)tetramethylenediamine,
N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4-aminophenyl)tetramethylenediamine ,
N,N'-bis(4-methylaminophenyl)-tetramethylenediamine,
N,N'-bis(ethyl)-N,N'-bis(4'-amino-3'-methylphenyl)ethylenediamine,
1,8-bis(2,5-diaminophenoxy)-3,5-dioxaoctane, and acid-addition salts thereof.

22. The composition according to claim 15, wherein said para-aminophenols are chosen from para-aminophenols of formula (IV) below, and acid-addition salts thereof: ##STR13##

in which:

R.sub.17 is chosen from a hydrogen atom, halogen atoms, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, (C.sub.1 -C.sub.4)alkoxy(C.sub.1 -C.sub.4)alkyl radicals, C.sub.1 -C.sub.4 aminoalkyl radicals and hydroxy(C.sub.1 -C.sub.4)alkylamino(C.sub.1 -C.sub.4)alkyl radicals,

R.sub.18 is chosen from a hydrogen atom, halogen atoms, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, C.sub.2 -C.sub.4 polyhydroxyalkyl radicals, C.sub.1 -C.sub.4 aminoalkyl radicals, C.sub.1 -C.sub.4 cyanoalkyl radicals and (C.sub.1 -C.sub.4)alkoxy-(C.sub.1 -C.sub.4)alkyl radicals, wherein at least one of the radicals R.sub.17 and R.sub.18 is a hydrogen atom.

23. The composition according to claim 22, wherein said para-aminophenols of formula (IV) are chosen from para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol, 4-amino-2-aminomethylphenol, 4-amino-2-(.beta.-hydroxyethylaminomethyl)phenol, 4-amino-2-fluorophenol, and acid-addition salts thereof.

24. The composition according to claim 15, wherein said ortho-aminophenols are chosen from 2-aminophenol, 2-amino-5-methylphenol, 2-amino-6-methylphenol, 5-acetamido-2-aminophenol, and acid-addition salts thereof.

25. The composition according to claim 15, wherein said heterocyclic bases are chosen from pyridine compounds, pyrimidine compounds, pyrazole compounds, pyrazolopyrimidine compounds, and acid-addition salts thereof.

26. The composition according to claim 25, wherein said heterocyclic bases are chosen from 2,5-diaminopyridine, 2-(4-methoxyphenyl)amino-3-aminopyridine, 2,3-diamino-6-methoxypyridine,
2-(.beta.-methoxyethyl)amino-3-amino-6-methoxypyridine, 3,4-diaminopyridine, and acid-addition salts thereof,

2,4,5,6-tetraamino-pyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine, 2,5,6-triaminopyrimidine, and acid-addition salts thereof,

4,5-diamino-1-methylpyrazole, 3,4-diaminopyrazole, 4,5-diamino-1-(4'-chlorobenzyl)pyrazole, 4,5-diamino-1,3-dimethylpyrazole, 4,5-diamino-3-methyl-1-phenylpyrazole, 4,5-diamino-1-methyl-3-phenylpyrazole, 4-amino-1,3-dimethyl-5-hydrazinopyrazole, 1-benzyl-4,5-diamino-3-methylpyrazole, 4,5-diamino-3-tert-butyl-1-methylpyrazole, 4,5-diamino-1-tert-butyl-3-methylpyrazole, 4,5-diamino-1-(.beta.-hydroxyethyl)-3-methylpyrazole, 4,5-diamino-1-ethyl-3-methylpyrazole, 4,5-diamino-1-ethyl-3-(4'-methoxyphenyl)pyrazole, 4,5-diamino-1-ethyl-3-hydroxymethylpyrazole, 4,5-diamino-3-hydroxymethyl-1-methylpyrazole, 4,5-diamino-3-hydroxymethyl-1-isopropylpyrazole, 4,5-diamino-3-methyl-1-isopropylpyrazole, 4-amino-5-(2'-aminoethyl)amino-1,3-dimethylpyrazole, 3,4 ,5-triaminopyrazole, 1-methyl-3,4,5-triaminopyrazole, 3,5-diamino-1-methyl-4-methylaminopyrazole, 3,5-diamino-4-(.beta.-hydroxyethyl)amino-1-methylpyrazole, and acid-addition salts thereof,

pyrazolo[1 ,5-a]pyrimidine-3,7-diamine;

2,5-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

pyrazolo[1,5-a]pyrimidine-3,5-diamine;

2,7-dimethylpyrazolo[1,5-a]pyrimidine-3,5-diamine;

3-aminopyrazolo[1,5-a]pyrimidin-7-ol;

3-aminopyrazolo[1,5-a]pyrimidin-5-ol;

2-(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)ethanol;

2-(7-aminopyrazolo[1,5-a]pyrimidin-3-ylamino)ethanol;

2-[(3-aminopyrazolo[1,5-a]pyrimidin-7-yl)-(2-hydroxyethyl)amino]ethanol;

2-[(7-aminopyrazolo[1,5-a]pyrimidin-3-yl)-(2-hydroxyethyl)amino]ethanol;

5,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5,N7,N7-tetramethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

and addition salts thereof and tautomeric forms thereof, when a tautomeric equilibrium exists.

27. The composition according to claim 1, wherein said at least one oxidation base is present in an amount ranging from 0.0005 to 12% by weight relative to the total weight of the composition.

28. The composition according to claim 27, wherein said at least one oxidation base is present in an amount ranging from 0.005 to 8% by weight relative to the total weight of the composition.

29. The composition according to claim 1, wherein said at least one second coupler is chosen from meta-aminophenols of formula (VI) below, and acid-addition salts thereof: ##STR14##

in which:

R.sub.23 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals and C.sub.2 -C.sub.4 polyhydroxyalkyl radicals,

R.sub.24 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 alkoxy radicals, and halogen atoms, and

R.sub.25 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 alkoxy radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals, C.sub.2 -C.sub.4 polyhydroxyalkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals and C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals.

30. The composition according to claim 29, wherein said halogen atoms are chosen from chlorine, bromine and fluorine atoms.

31. The composition according to claim 29, wherein said at least one second coupler is chosen from meta-aminophenol, 5-amino-2-methoxyphenol, 5-amino-2-(.beta.-hydroxyethyloxy)phenol, 5-amino-2-methylphenol, 5-N-(.beta.-hydroxyethyl)amino-2-methylphenol, 5-N-(.beta.-hydroxyethyl)amino-4-methoxy-2-methylphenol, 5-amino-4-methoxy-2-methylphenol, 5-amino-4-chloro-2-methylphenol, 5-amino-2,4-dimethoxyphenol, 5-(.gamma.-hydroxypropylamino)-2-methylphenol, and acid-addition salts thereof.

32. The composition according to claim 1, wherein said at least one second coupler is chosen from meta-diphenols of formula (VII) below, and acid-addition salts thereof: ##STR15##

in which:

R.sub.26 and R.sub.27, which may be identical or different, are chosen from a hydrogen atom, halogenatons, and C.sub.1 -C.sub.4 alkyl radicals.

33. The composition according to claim 32, wherein said halogen atoms are chosen from chlorine, bromine, and fluorine atoms.

34. The composition according to claim 32, wherein said at least one second coupler is chosen from 1,3-dihydroxybenzene, 2-methyl-1,3-dihydroxybenzene, 4-chloro-1,3-dihydroxybenzene, 2-chloro-1,3-dihydroxybenzene, and acid-addition salts thereof.

35. The composition according to claim 1, wherein said at least one second coupler is present in an amount ranging from 0.0001 to 8% by weight relative to the total weight of the composition.

36. The composition according to claim 35, wherein said at least one second coupler is present in an amount ranging from 0.005 to 5% by weight relative to the total weight of the composition.

37. The composition according to claim 1, wherein said acid-addition salts are chosen from hydrochlorides, hydrobromides, sulphates, tartrates, lactates and acetates.

38. The composition according to claim 1, wherein said composition has a pH ranging from 5 to 11.

39. The composition according to claim 1, further comprising at least one peroxidase.

40. A ready-to-use composition for the oxidation dyeing of keratin fibers comprising:

an oxidation base chosen from para-phenylenediamine, para-aminophenol and acid-addition salts thereof;

a first coupler chosen from 2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene, 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof;

a second coupler chosen from 1,3-dihydroxybenzene, meta-aminophenol, 5-amino-2-methylphenol, and acid-addition salts thereof;

an enzyme chosen from uricases; and

a donor chosen from uric acid and salts thereof.

41. A process for dyeing keratin fibers, comprising applying a ready-to-use composition for the oxidation dyeing of keratin fibers to said fibers and developing for a period sufficient to achieve the desired coloration, wherein said composition comprises:

at least one solvent chosen from water and organic solvents,

at least one oxidation base,

at least one first coupler chosen from the meta-phenylenediamines of formula (I) below, and acid-addition salts thereof: ##STR16##

in which:

R.sub.1 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals and C.sub.2 -C.sub.4 polyhydroxyalkyl radicals;

R.sub.2 and R.sub.3, which may be identical or different, are chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals and C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals;

R.sub.4 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkoxy radicals, C.sub.1 -C.sub.4 aminoalkoxy radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals, C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals and a 2,4diaminophenoxyalkoxy radical; and

wherein at least one of said radicals R.sub.1 to R.sub.4 is a radical other than a hydrogen atom,

at least one second coupler chosen from meta-aminophenols, meta-diphenols and acid-addition salts thereof,

at least one enzyme chosen from 2-electron oxidoreductases;

at least one donor for said enzyme; and

wherein said composition does not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

42. A process for dyeing keratin fibers, comprising applying a composition for the oxidation dyeing of keratin fibers to said fibers and developing for a period sufficient to achieve a desired coloration, wherein said composition comprises:

an oxidation base chosen from para-phenylenediamine para-aminophenol and acid-addition salts thereof;

a first coupler chosen from 2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene, 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene para-aminophenol, and acid-addition salts thereof;

a second coupler chosen from 1,3-dihydroxybenzene, meta-aminophenol, 5-amino-2methylphenol, and acid-addition salts thereof;

an enzyme chosen from uricases; and

a donor chosen from uric acid and salts thereof.

43. A process for dyeing keratin fibers, comprising:

separately storing a first composition,

separately storing a second composition,

thereafter mixing said first composition with said second composition,

applying said mixture to said keratin fibers, and

developing for a period of time sufficient to achieve a desired coloration,

wherein said first composition comprises:

at least one oxidation base,

at least one first coupler chosen from the meta-phenylenediamines of formula (I) below, and acid-addition salts thereof: ##STR17##

in which:

R.sub.1 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals and C.sub.2 -C.sub.4 polyhydroxyalkyl radicals;

R.sub.2 and R.sub.3, which may be identical or different, are chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals and C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals;

R.sub.4 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkoxy radicals, C.sub.1 -C.sub.4 aminoalkoxy radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals, C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals and a 2,4-diaminophenoxyalkoxy radical; and

wherein at least one of said radicals R.sub.1 to R.sub.4 is a radical other than a hydrogen atom, and

at least one second coupler chosen from meta-aminophenols, meta-diphenols, and acid-addition salts thereof,

wherein said second composition comprises at least one enzyme chosen from 2-electron oxidoreductases and at least one donor for said enzyme; and

wherein said first and second compositions do not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

44. A process for dyeing keratin fibers, comprising:

separately storing a first composition,

separately storing a second composition,

thereafter mixing said first composition with said second composition,

applying said mixture to said keratin fibers, and

developing for a period of time sufficient to achieve a desired coloration,

wherein said first composition comprises:

at least one oxidation base chosen from:

para-phenylenediamines chosen from: para-phenylenediamine, para-toluylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N-dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3-methylaniline, N,N-bis(.beta.-hydroxyethyl)-para-phenylenediamine, 4-amino-N,N-bis(.beta.-hydroxyethyl)-2-methylaniline, 4-amino-2-chloro-N,N-bis(.beta.-hydroxyethyl)aniline, 2-.beta.-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-para-phenylenediamine, N-(.beta.-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-para-phenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N,N-(ethyl-.beta.-hydroxyethyl)-para-phenylenediamine, N-(.beta.,.gamma.-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-.beta.-hydroxyethyloxy-para-phenylenediamine, 2-.beta.-acetylaminoethyloxy-para-phenylenediamine, N-(.beta.-methoxyethyl)-para-phenylenediamine, and acid-addition salts thereof,

double bases chosen from: N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol , N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine, N,N'-bis(4-aminophenyl)tetramethylenediamine, N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4-aminophenyl)tetramethylenediamine , N,N'-bis(4-methylaminophenyl)tetramethylenediamine, N,N'-bis(ethyl)-N,N--bis(4'-amino-3'-methylphenyl)ethylenediamine, 1,8-bis(2,5-diaminophenoxy)-3,5-dioxaoctane, and acid-addition salts thereof,

para-aminophenols chosen from: para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol, 4-amino-2-aminomethylphenol, 4-amino-2-(.beta.-hydroxyethylaminomethyl)phenol, 4-amino-2-fluorophenol, and acid-addition salts thereof,

ortho-aminophenols chosen from: 2-aminophenol, 2-amino-5-methyl phenol, 2-amino-6-methylphenol, 5-acetamido-2-aminophenol, and acid-addition salts thereof,

pyridine compounds chosen from: 2,5-diaminopyridine, 2-(4-methoxyphenyl)amino-3-aminopyridine, 2,3-diamino-6-methoxypyridine, 2-(.beta.-methoxyethyl)amino-3-amino-6-methoxypyridine, 3,4-diaminopyridine, and acid-addition salts thereof,

pyrimidine compounds chosen from: 2,4,5,6-tetraamino-pyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine, 2,5,6-triaminopyrimidine, and acid-addition salts thereof,

pyrazole compounds chosen from: 4,5-diamino-1-methylpyrazole, 3,4-diaminopyrazole, 4,5-diamino-1-(4'-chlorobenzyl)pyrazole, 4,5-diamino-1,3-dimethylpyrazole, 4,5-diamino-3-methyl-1-phenylpyrazole, 4,5-diamino-1-methyl-3-phenylpyrazole, 4-amino-1,3-dimethyl-5-hydrazinopyrazole, 1-benzyl-4,5-diamino-3-methylpyrazole, 4,5-diamino-3-tert-butyl-1-methylpyrazole, 4,5-diamino-1-tert-butyl3-methylpyrazole, 4,5-diamino-1-(.beta.-hydroxyethyl)-3-methylpyrazole, 4,5-diamino-1-ethyl-3-methylpyrazole, 4,5-diamino-1-ethyl-3-(4'-methoxyphenyl)pyrazole,

4,5-diamino-1-ethyl-3-hydroxymethylpyrazole,
4,5-diamino-3-hydroxymethyl-1-methylpyrazole,
4,5-diamino-3-hydroxymethyl-1-isopropylpyrazole,
4,5-diamino-3-methyl-1-isopropylpyrazole,
4-amino-5-(2'-aminoethyl)amino-1,3-dimethylpyrazole, 3,4,5-triaminopyrazole,
1-methyl-3,4,5-triaminopyrazole, 3,5-diamino-1-methyl-4-methylaminopyrazole,
3,5-diamino-4-(.beta.-hydroxyethyl)amino-1-methylpyrazole, and acid-addition
salts thereof,

pyrazolopyrimidine compounds chosen from:

pyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

pyrazolo[1,5-a]pyrimidine-3,5-diamine;

2,7-dimethylpyrazolo[1,5-a]pyrimidine-3,5-diamine;

3-aminopyrazolo[1,5-a]pyrimidin-7-ol ;

3-aminopyrazolo[1,5-a]pyrimidin-5-ol;

2-(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)ethanol;

2-(7-aminopyrazolo[1,5-a]pyrimidin-3-ylamino)ethanol;

2-[(3-aminopyrazolo[1,5-a]pyrimidin-7-yl)-(2-hydroxyethyl)amino]ethanol;

2-[(7-aminopyrazolo[1,5-a]pyrimidin-3-yl)-(2-hydroxyethyl)amino]ethanol;

5,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5,N7,N7-tetramethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

and addition salts thereof and tautomeric forms thereof, when a tautomeric
equilibrium exists;

at least one first coupler chosen from meta-phenylenediamines chosen from:
3,5-diamino-1-ethyl-2-methoxybenzene, 3,5-diamino-2-methoxy-1-methylbenzene,
2,4-diamino-1-ethoxybenzene, 1,3-bis(2,4-diaminophenoxy)propane,
bis(2,4-diaminophenoxy)methane, 1-(.beta.-aminoethyloxy)-2,4-diaminobenzene,
2-amino-1-(.beta.-hydroxyethyloxy)-4-methylaminobenzene,
2,4-diamino-1-ethoxy-5-methylbenzene,
2,4-diamino-5-(.beta.-hydroxyethyloxy)-1-methylbenzene,
2,4-diamino-1-(.beta.,.gamma.-dihydroxypropyloxy)benzene,
2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene,
2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts
thereof; and

at least one second coupler chosen from:

meta-aminophenols chosen from: meta-aminophenol, 5-amino-2-methoxyphenol,
5-amino-2-(.beta.-hydroxyethyloxy)phenol, 5-amino-2-methylphenol,
5-N-(.beta.-hydroxyethyl)amino-2-methylphenol,
5-N-(.beta.-hydroxyethyl)amino-4-methoxy-2-methylphenol,
5-amino-4-methoxy-2-methylphenol, 5-amino-4-chloro-2-methylphenol,
5-amino-2,4-dimethoxyphenol, 5-(.gamma.-hydroxypropylamino)-2-methylphenol, and
acid-addition salts thereof, and

meta-diphenols chosen from: 1,3-dihydroxybenzene, 2-methyl-1,3-dihydroxybenzene,
4-chloro-1,3-dihydroxybenzene, 2-chloro-1,3-dihydroxybenzene, and acid-addition
salts thereof;

wherein said second composition comprises:

at least one enzyme chosen from pyranose oxidases, glucose oxidases, glycerol oxidases, lactate oxidases, pyruvate oxidases and uricases; and

a donor for said enzyme chosen from D-glucose, L-sorbose, D-xylose, glycerol, dihydroxyacetone, lactic acid and salts thereof; pyruvic acid and salts thereof; and uric acid and salts thereof;

wherein said first and second compositions do not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

45. A process for dyeing keratin fibers, comprising:

separately storing a first composition,

separately storing a second composition,

thereafter mixing said first composition with said second composition,

applying said mixture to said keratin fibers, and

developing for a period sufficient to achieve a desired coloration:

wherein said first composition comprises:

at least one solvent chosen from water and organic solvents;

an oxidation base chosen from para-phenylenediamine, para-aminophenol, and acid-addition salts thereof,

a first coupler chosen from 2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene, 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof; and

a second coupler chosen from 1,3-dihydroxybenzene, meta-aminophenol, 5-amino-2-methylphenol, and acid-addition salts thereof,

wherein said first composition does not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol; and

wherein said second composition comprises:

an enzyme chosen from uricases; and

a donor chosen from uric acid and salts thereof.

46. A multi-compartment dyeing kit, comprising a first compartment containing a first composition and second compartment containing a second composition,

wherein said first composition comprises:

at least one oxidation base,

at least one first coupler chosen from the meta-phenylenediamines of formula (I) below, and acid-addition salts thereof: ##STR18##

in which:

R.sub.1 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkyl radicals and C.sub.2 -C.sub.4 polyhydroxyalkyl radicals;

R.sub.2 and R.sub.3, which may be identical or different, are chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkyl radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals and C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals;

R.sub.4 is chosen from a hydrogen atom, C.sub.1 -C.sub.4 alkoxy radicals, C.sub.1 -C.sub.4 aminoalkoxy radicals, C.sub.1 -C.sub.4 monohydroxyalkoxy radicals, C.sub.2 -C.sub.4 polyhydroxyalkoxy radicals and a 2,4-diaminophenoxyalkoxy radical; and

wherein at least one of said radicals R.sub.1 to R.sub.4 is a radical other than a hydrogen atom, and

at least one second coupler chosen from meta-aminophenols, meta-diphenols and acid-addition salts thereof,

wherein said second composition comprises at least one enzyme chosen from 2-electron oxidoreductases and at least one donor for said enzyme; and

wherein said first and second compositions do not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

47. A multi-compartment dyeing kit, comprising a first compartment containing a first composition and second compartment containing a second composition,

wherein said first composition comprises:

at least one oxidation base chosen from:

para-phenylenediamines chosen from para-phenylenediamine, para-toluylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N -dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3-methylaniline, N,N-bis(.beta.-hydroxyethyl)-para-phenylenediamine, 4-amino-N,N-bis(.beta.-hydroxyethyl)-2-methylaniline, 4-amino-2-chloro-N,N-bis(.beta.-hydroxyethyl)aniline, 2-.beta.-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-para-phenylenediamine, N-(.beta.-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-para-phenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N,N-(ethyl-.beta.-hydroxyethyl)-para-phenylenediamine, N-(.beta.,.gamma.-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-.beta.-hydroxyethyloxy-para-phenylenediamine, 2-.beta.-acetylaminoethyloxy-para-phenylenediamine, N-(.beta.-methoxyethyl)-para-phenylenediamine, and acid-addition salts thereof,

double bases chosen from: N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol , N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine, N,N'-bis(4-aminophenyl)tetramethylenediamine, N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4-aminophenyl)tetramethylenediamine , N,N'-bis(4-methylaminophenyl)tetramethylenediamine, N,N'-bis(ethyl)-N,N'-bis(4'-amino-3'-methylphenyl)ethylenediamine, 1,8-bis(2,5-diaminophenoxy)-3,5-dioxaoctane, and acid-addition salts thereof,

para-aminophenols chosen from: para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol, 4-amino-2-aminomethylphenol, 4-amino-2-(.beta.-hydroxyethylaminomethyl)phenol, 4-amino-2-fluorophenol, and acid-addition salts thereof,

ortho-aminophenols chosen from: 2-aminophenol, 2-amino-5-methylphenol, 2-amino-6-methylphenol, 5-acetamido-2-aminophenol, and acid-addition salts thereof,

pyridine compounds chosen from: 2,5-diaminopyridine, 2-(4-methoxyphenyl)amino-3-aminopyridine, 2,3-diamino-6-methoxypyridine, 2-(.beta.-methoxyethyl)amino-3-amino-6-methoxypyridine, 3,4-diaminopyridine, and acid-addition salts thereof,

pyrimidine compounds chosen from: 2,4,5,6-tetraamino-pyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine, 2,5,6-triaminopyrimidine, and acid-addition salts thereof,

pyrazole compounds chosen from: 4,5-diamino-1-methylpyrazole, 3,4-diaminopyrazole, 4,5-diamino-1-(4'-chlorobenzyl)pyrazole, 4,5-diamino-1,3-dimethylpyrazole, 4,5-diamino-3-methyl-1-phenylpyrazole, 4,5-diamino-1-methyl-3-phenylpyrazole, 4-amino-1,3-dimethyl-5-hydrazinopyrazole, 1-benzyl-4,5-diamino-3-methylpyrazole, 4,5-diamino-3-tert-butyl-1-methylpyrazole, 4,5-diamino-1-tert-butyl-3-methylpyrazole, 4,5-diamino-1-(.beta.-hydroxyethyl)-3-methylpyrazole, 4,5-diamino-1-ethyl-3-methylpyrazole, 4,5-diamino-1-ethyl-3-(4'-methoxyphenyl)pyrazole, 4,5-diamino-1-ethyl-3-hydroxymethylpyrazole, 4,5-diamino-3-hydroxymethyl-1-methylpyrazole, 4,5-diamino-3-hydroxymethyl-1-isopropylpyrazole, 4,5-diamino-3-methyl-1-isopropylpyrazole, 4-amino-5-(2'-aminoethyl)amino-1,3-dimethylpyrazole, 3,4,5-triaminopyrazole, 1-methyl-3,4,5-triaminopyrazole, 3,5-diamino-1-methyl-4-methylaminopyrazole, 3,5-diamino-4-(.beta.-hydroxyethyl)amino-1-methylpyrazole, and acid-addition salts thereof,

pyrazolopyrimidine compounds chosen from:

pyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

pyrazolo[1,5-a]pyrimidine-3,5-diamine;

2,7-dimethylpyrazolo[1,5-a]pyrimidine-3,5-diamine;

3-aminopyrazolo[1,5-a]pyrimidin-7-ol;

3-aminopyrazolo[1,5-a]pyrimidin-5-ol;

2-(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)ethanol;

2-(7-aminopyrazolo[1,5-a]pyrimidin-3-ylamino)ethanol;

2-[(3-aminopyrazolo[1,5-a]pyrimidin-7-yl)-(2-hydroxyethyl)amino]ethanol;

2-[(7-aminopyrazolo[1,5-a]pyrimidin-3-yl)-(2-hydroxyethyl)amino]ethanol;

5,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5,N7,N7-tetramethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

and addition salts thereof and tautomeric forms thereof, when a tautomeric equilibrium exists;

at least one first coupler chosen from metaphenylenediamines chosen from: 3,5-diamino-1-ethyl-2-methoxybenzene, 3,5-diamino-2-methoxy-1-methylbenzene, 2,4-diamino-1-ethoxybenzene, 1,3-bis(2,4-diaminophenoxy)propane, bis(2,4-diaminophenoxy)methane, 1-(.beta.-aminoethyloxy)-2,4-diaminobenzene, 2-amino-1-(.beta.-hydroxyethyloxy)-4-methylaminobenzene, 2,4-diamino-1-ethoxy-5-methylbenzene, 2,4-diamino-5-(.beta.-hydroxyethyloxy)-1-methylbenzene, 2,4-diamino-1-(.beta.,.gamma.-dihydroxypropyloxy)benzene, 2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene, 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof; and

at least one second coupler chosen from:

meta-aminophenols chosen from: meta-aminophenol, 5-amino-2-methoxyphenol, 5-amino-2-(.beta.-hydroxyethyloxy)phenol, 5-amino-2-methylphenol, 5-N-(.beta.-hydroxyethyl)amino-2-methylphenol, 5-N-(.beta.-hydroxyethyl)amino-4-methoxy-2-methylphenol, 5-amino-4-methoxy-2-methylphenol, 5-amino-4-chloro-2-methylphenol, 5-amino-2,4-dimethoxyphenol, 5-(.gamma.-hydroxypropylamino)-2-methylphenol, and acid-addition salts thereof, and

meta-diphenols chosen from: 1,3-dihydroxybenzene, 2-methyl-1,3-dihydroxybenzene, 4-chloro-1,3-dihydroxybenzene, 2-chloro-1,3-dihydroxybenzene, and acid-addition salts thereof;

wherein said second composition comprises:

at least one enzyme chosen from pyranose oxidases, glucose oxidases, glycerol oxidases, lactate oxidases, pyruvate oxidases and uricases; and

a donor for said enzyme chosen from D-glucose, L-sorbose, D-xylose, glycerol, dihydroxyacetone, lactic acid and salts thereof; pyruvic acid and salts thereof; and uric acid and salts thereof;

wherein said first and second compositions do not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

48. A multi-compartment dyeing kit, comprising a first compartment containing a first composition and second compartment containing a second composition,

wherein said first composition comprises:

at least one solvent chosen from water and organic solvents;

an oxidation base chosen from para-phenylenediamine, para-aminophenol, and acid-addition salts thereof;

a first coupler chosen from 2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene, 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof; and

a second coupler chosen from 1,3-dihydroxybenzene, meta-aminophenol, 5-amino-2-methylphenol, and acid-addition salts thereof;

wherein said first composition does not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol; and

wherein said second composition comprises:

an enzyme chosen from uricases; and

a donor chosen from uric acid and salts thereof.

49. A ready-to-use composition for the oxidation dyeing of keratin fibers comprising:

at least one solvent chosen from water and organic solvents,

at least one oxidation base chosen from:

para-phenylenediamines chosen from para-phenylenediamine, para-toluylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N-dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3-methylaniline, N,N-bis(.beta.-hydroxyethyl)-para-phenylenediamine, 4-amino-N,N-bis(.beta.-hydroxyethyl)-2-methylaniline, 4-amino-2-chloro-N,N-bis(.beta.-hydroxyethyl)aniline, 2-.beta.-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-para-phenylenediamine, N-(.beta.-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-para-phenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N,N-(ethyl-.beta.-hydroxyethyl)-para-phenylenediamine, N-(.beta.,.gamma.-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-.beta.-hydroxyethyloxy-para-phenylenediamine, 2-.beta.-acetylaminoethyloxy-para-phenylenediamine, -(.beta.-methoxyethyl)-para-phenylenediamine, and acid-addition salts thereof,

double bases chosen from: N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol , N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine, N,N'-bis(4-aminophenyl)tetramethylenediamine, N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4-aminophenyl)tetramethylenediamine , N,N'-bis(4-methylaminophenyl)-tetramethylenediamine, N,N'-bis(ethyl)-N,N'-bis(4'-amino-3'-methylphenyl)ethylenediamine, 1,8-bis(2,5-diaminophenoxy)-3,5-dioxaoctane, and acid-addition salts thereof,

para-aminophenols chosen from: para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol, 4-amino-2-aminomethylphenol, 4-amino-2-(.beta.-hydroxyethylaminomethyl)phenol, 4-amino-2-fluorophenol, and acid-addition salts thereof,

ortho-aminophenols chosen from: 2-aminophenol, 2-amino-5-methyl phenol, 2-amino-6-methylphenol, 5-acetamido-2-aminophenol, and acid-addition salts thereof,

pyridine compounds chosen from: 2,5-diaminopyridine, 2-(4-methoxyphenyl)amino-3-aminopyridine, 2,3-diamino-6-methoxypyridine, 2-(.beta.-methoxyethyl)amino-3-amino-6-methoxypyridine, 3,4-diaminopyridine, and acid-addition salts thereof,

pyrimidine compounds chosen from: 2,4,5,6-tetraamino-pyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine, 2,5,6-triaminopyrimidine, and acid-addition salts thereof,

pyrazole compounds chosen from: 4,5-diamino-1-methylpyrazole, 3,4-diaminopyrazole, 4,5-diamino-1-(4'-chlorobenzyl)pyrazole, 4,5-diamino-1,3-dimethylpyrazole, 4,5-diamino-3-methyl-1-phenylpyrazole, 4,5-diamino-1-methyl-3-phenylpyrazole, 4-amino-1,3-dimethyl-5-hydrazinopyrazole, 1-benzyl-4,5-diamino-3-methylpyrazole, 4,5-diamino-3-tert-butyl-1-methylpyrazole, 4,5-diamino-1-tert-butyl-3-methylpyrazole,

4,5-diamino-1-(.beta.-hydroxyethyl)-3-methylpyrazole,
4,5-diamino-1-ethyl-3-methylpyrazole,
4,5-diamino-1-ethyl-3-(4'-methoxyphenyl)pyrazole,
4,5-diamino-1-ethyl-3-hydroxymethylpyrazole,
4,5-diamino-3-hydroxymethyl-1-methylpyrazole,
4,5-diamino-3-hydroxymethyl-1-isopropylpyrazole,
4,5-diamino-3-methyl-1-isopropylpyrazole,
4-amino-5-(2'-aminoethyl)amino-1,3-dimethylpyrazole, 3,4,5-triaminopyrazole,
1-methyl-3,4,5-triaminopyrazole, 3,5-diamino-1-methyl-4-methylaminopyrazole,
3,5-diamino-4-(.beta.-hydroxyethyl)amino-1-methylpyrazole, and acid-addition salts thereof, and

pyrazolopyrimidine compounds chosen from:

pyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5-d imethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

pyrazolo[1,5-a]pyrimidine-3,5-diamine;

2,7-dimethylpyrazolo[1,5-a]pyrimidine-3,5-diamine;

3-aminopyrazolo[1,5-a]pyrimidin-7-ol;

3-aminopyrazolo[1,5-a]pyrimidin-5-ol;

2-(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)ethanol;

2-(7-aminopyrazolo[1,5-a]pyrimidin-3-ylamino)ethanol;

2-[(3-aminopyrazolo[1,5-a]pyrimidin-7-yl)-(2-hydroxyethyl)amino]ethanol;

2-[(7-aminopyrazolo[1,5-a]pyrimidin-3-yl)-(2-hydroxyethyl)amino]ethanol;

5,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5,N7,N7-tetramethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

and addition salts thereof and the tautomeric forms thereof, when a tautomeric equilibrium exists;

at least one first coupler chosen from 3,5-diamino-1-ethyl-2-methoxybenzene,
3,5-diamino-2-methoxy-1-methylbenzene, 2,4-diamino-1-ethoxybenzene,
1,3-bis(2,4-diaminophenoxy)propane bis(2,4-diaminophenoxy)methane,
1-(.beta.-aminoethyloxy)-2,4-diaminobenzene,
2-amino-1-(.beta.-hydroxyethyloxy)-4-methylaminobenzene,
2,4-diamino-1-ethoxy-5-methylbenzene,
2,4-diamino-5-(.beta.-hydroxyethyloxy)-1-methylbenzene,
2,4-diamino-1-(.beta.,.gamma.-dihydroxypropyloxy)benzene,
2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene,
2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof;

at least one second coupler chosen from:

meta-aminophenols chosen from: meta-aminophenol, 5-amino-2-methoxyphenol,
5-amino-2-(.beta.-hydroxyethyloxy)phenol, 5-amino-2-methylphenol,
5-N-(.beta.-hydroxyethyl)amino-2-methylphenol,
5-N-(.beta.-hydroxyethyl)amino-4-methoxy-2-methylphenol,
5-amino-4-methoxy-2-methylphenol, 5-amino-4-chloro-2-methylphenol,
5-amino-2,4-dimethoxyphenol, 5-(.gamma.-hydroxypropylamino)-2-methylphenol, and acid-addition salts thereof, and

meta-diphenols chosen from 1,3-dihydroxybenzene, 2-methyl-1,3-dihydroxybenzene, 4-chloro-1,3-dihydroxybenzene and 2-chloro-1,3-dihydroxybenzene, and acid-addition salts thereof;

at least one enzyme chosen from pyranose oxidases, glucose oxidases, glycerol oxidases, lactate oxidases, pyruvate oxidases and uricases;

at least one donor for said enzyme chosen from D-glucose, L-sorbose, D-xylose, glycerol, dihydroxyacetone, lactic acid and salts thereof; pyruvic acid and salts thereof; and uric acid and salts thereof; and

wherein said composition does not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.

50. A process for dyeing keratin fibers, comprising applying a ready-to-use composition for the oxidation dyeing of keratin fibers to said fibers and developing for a period sufficient to achieve the desired coloration, wherein said composition comprises:

at least one solvent chosen from water and organic solvents,

at least one oxidation base chosen from:

para-phenylenediamines chosen from: para-phenylenediamine, para-toluylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N-dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3-methylaniline, N,N-bis(.beta.-hydroxyethyl)-para-phenylenediamine, 4-amino-N,N-bis(.beta.-hydroxyethyl)-2-methylaniline, 4-amino-2-chloro-N,N-bis(.beta.-hydroxyethyl)aniline, 2-.beta.-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-para-phenylenediamine, N-(.beta.-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-para-phenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N,N-(ethyl-.beta.-hydroxyethyl)-para-phenylenediamine, N-(.beta.,.gamma.-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-.beta.-hydroxyethyloxy-para-phenylenediamine, 2-.beta.-acetylaminoethyloxy-para-phenylenediamine and N-(.beta.-methoxyethyl)-para-phenylenediamine, and acid-addition salts thereof,

double bases chosen from: N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol , N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine, N,N'-bis(4-aminophenyl)tetramethylenediamine, N,N'-bis(.beta.-hydroxyethyl)-N,N'-bis(4-aminophenyl)tetramethylenediamine , N,N'-bis(4-methylaminophenyl)tetramethylenediamine, N,N'-bis(ethyl)-N,N'-bis(4'-amino-3'-methylphenyl)ethylenediamine and 1,8-bis(2,5-diaminophenoxy)-3,5-dioxaoctane, and acid-addition salts thereof,

para-aminophenols chosen from: para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol, 4-amino-2-aminomethylphenol, 4-amino-2-(.beta.-hydroxyethylaminomethyl)phenol and 4-amino-2-fluorophenol, and acid-addition salts thereof,

ortho-aminophenols chosen from: 2-aminophenol, 2-amino-5-methylphenol, 2-amino-6-methylphenol, 5-acetamido-2-aminophenol, and acid-addition salts thereof,

pyridine compounds chosen from: 2,5-diaminopyridine,

2-(4-methoxyphenyl)amino-3-aminopyridine, 2,3-diamino-6-methoxypyridine, 2-(.beta.-methoxyethyl)amino-3-amino-6-methoxypyridine and 3,4-diaminopyridine, and acid-addition salts thereof,

pyrimidine compounds chosen from: 2,4,5,6-tetraamino-pyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine and 2,5,6-triaminopyrimidine, and acid-addition salts thereof,

pyrazole compounds chosen from: 4,5-diamino-1-methylpyrazole, 3,4-diaminopyrazole, 4,5-diamino-1-(4'-chlorobenzyl)pyrazole, 4,5-diamino-1,3-dimethylpyrazole, 4,5-diamino-3-methyl-1-phenylpyrazole, 4,5-diamino-1-methyl-3-phenylpyrazole, 4-amino-1,3-dimethyl-5-hydrazinopyrazole, 1-benzyl-4,5-diamino-3-methylpyrazole, 4,5-diamino-3-tert-butyl-1-methylpyrazole, 4,5-diamino-1-tert-butyl-3-methylpyrazole, 4,5-diamino-1-(.beta.-hydroxyethyl)-3-methylpyrazole, 4,5-diamino-1-ethyl-3-methylpyrazole, 4,5-diamino-1-ethyl-3-(4'-methoxyphenyl)pyrazole, 4,5-diamino-1-ethyl-3-hydroxymethylpyrazole, 4,5-diamino-3-hydroxymethyl-1-methylpyrazole, 4,5-diamino-3-hydroxymethyl-1-isopropylpyrazole, 4,5-diamino-3-methyl-1-isopropylpyrazole, 4-amino-5-(2'-aminoethyl)amino-1,3-dimethylpyrazole, 3,4,5-triaminopyrazole, 1-methyl-3,4,5-triaminopyrazole, 3,5-diamino-1-methyl-4-methylaminopyrazole and 3,5-diamino-4-(.beta.-hydroxyethyl)amino-1-methylpyrazole, and acid-addition salts thereof,

pyrazolopyrimidine compounds chosen from:

pyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

pyrazolo[1,5-a]pyrimidine-3,5-diamine;

2,7-dimethylpyrazolo[1,5-a]pyrimidine-3,5-diamine;

3-aminopyrazolo[1, 5-a]pyrimidin-7-ol;

3-aminopyrazolo[1, 5-a]pyrimidin-5-ol;

2-(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)ethanol;

2-(7-aminopyrazolo[1,5-a]pyrimidin-3-ylamino)ethanol;

2-[(3-aminopyrazolo[1,5-a]pyrimidin-7-yl)-(2-hydroxyethyl)amino]ethanol;

2-[(7-aminopyrazolo[1,5-a]pyrimidine-3-yl)-(2-hydroxyethyl)amino]ethanol;

5,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,6-dimethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

2,5, N7, N7-tetramethylpyrazolo[1,5-a]pyrimidine-3,7-diamine;

and addition salts thereof and the tautomeric forms thereof, when a tautomeric equilibrium exists;

at least one first coupler chosen from 3,5-diamino-1-ethyl-2-methoxybenzene, 3,5-diamino-2-methoxy-1-methylbenzene, 2,4-diamino-1-ethoxybenzene, 1,3-bis(2,4-diaminophenoxy)propane, bis(2,4-diaminophenoxy)methane, 1-(.beta.-aminoethyloxy)-2,4-diaminobenzene, 2-amino-1-(.beta.-hydroxyethyloxy)-4-methylaminobenzene, 2,4-diamino-1-ethoxy-5-methylbenzene,

2,4-diamino-5-(.beta.-hydroxyethyloxy)-1-methylbenzene,
2,4-diamino-1-(.crclbar.,.gamma.-dihydroxypropyloxy)benzene,
2,4-diamino-1-(.beta.-hydroxyethyloxy)benzene,
2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, and acid-addition salts thereof;

at least one second coupler chosen from:

meta-aminophenols chosen from: meta-aminophenol, 5-amino-2-methoxyphenol, 5-amino-2-(.beta.-hydroxyethyloxy)phenol, 5-amino-2-methylphenol, 5-N-(.beta.-hydroxyethyl)amino-2-methylphenol, 5-N-(.beta.-hydroxyethyl)amino-4-methoxy-2-methylphenol, 5-amino-4-methoxy-2-methylphenol, 5-amino-4-chloro-2-methylphenol, 5-amino-2,4-dimethoxyphenol and 5-(.gamma.-hydroxypropylamino)-2-methylphenol, and acid-addition salts thereof,

meta-diphenols chosen from: 1,3-dihydroxybenzene, 2-methyl-1,3-dihydroxybenzene, 4-chloro-1,3-dihydroxybenzene and 2-chloro-1,3-dihydroxybenzene, and acid-addition salts thereof,

at least one enzyme chosen from pyranose oxidases, glucose oxidases, glycerol oxidases, lactate oxidases, pyruvate oxidases and uricases;

at least one donor for said enzyme chosen from D-glucose, L-sorbose, D-xylose, glycerol, dihydroxyacetone, lactic acid and salts thereof; pyruvic acid and salts thereof; and uric acid and salts thereof; and

wherein said composition does not contain the combination of 2-amino-4-N-(.beta.-hydroxyethyl)amino-1-methoxybenzene, 4-amino-3-methylphenol and 5-amino-2-methylphenol.